1. (Amended) A method for estimating residual noise in [the] a frequency range [(271)] of a desired part [(240)] of a signal, [characterized in that] wherein [the] an amplitude of the signal [(114)] comprising the noise is modified, and the signal [(114)] is combined with the modified signal [(115)] to create a noise estimation measure [(116)].

2. (Amended) A method according to claim 1, [characterized in that] wherein the noise estimation measure [(116)] is based on [the] an average power content of the signal [(114)] and the modified signal [(115)] over their frequency spectra [(270, 271, 272)].

3. (Amended) A method according to claim 2, [characterized in that] wherein the noise estimation measure [(116)] is based on the average power content of the signal [(114)] and the modified signal [(115)] over one or more common ranges [(270; 271; 272)] of their frequency spectra.

4. (Amended) A method according to any one of claims 1 to 3, [characterized in that] wherein the signal [(114)] is attenuated primarily outside [(270, 272) the] a frequency range [(271)] of the desired part [(240)] of the signal.

5. (Amended) A method according to [any one of claims] claim 2 [to 4, characterized in that] or 3, wherein the noise estimation measure [(116)] is based on [the] a difference in average power content [(232, 252)] between the signal [(114)] and the modified signal [(115)].

6. (Amended) A method according to any one of claims 1 to [5, characterized in that] 3, wherein the signal [(114)] is a digital signal.

7. (Amended) A method according to [any one of claims] claim 4 [to 6, characterized in that], wherein the signal [(114)] is attenuated primarily outside [(270, 272)] the frequency range [(271)] of the desired part [(240)] of the signal [(114) by means of] via a digital filter [(108)].

8. (Amended) A method according to any one of claims 1 to [7, characterized in that] 3, wherein the noise estimation measure [(116)] is quantized in a number of different levels each indicating different levels of noise present.

9. (Amended) A method according to any one of claims 1 to [8, characterized in that] 3, wherein the desired part [(240)] of the signal [(114)] represents a selected channel of a digital cellular radio system, and the noise estimation measure [(116)] or a postprocessed version thereof [(117)] is communicated to a link quality control system of said digital cellular radio system as an estimator of current link quality.

10. (Amended) A method according to claim 9, [characterized in that] wherein a noise estimation measurement is performed during each of the basic time units [(i.e. time slot or burst)] of a channel of the digital cellular radio system, and the result [(116; 117)] is communicated to a link quality control system of the digital cellular radio system as an estimator of current link quality.

11. (Amended) A method according to [any one of] claim 9 [or 10], [characterized in that] wherein several noise estimation measurements are performed, the results are stored, and the results are evaluated, and a derived trend is communicated to a link quality control system of a digital cellular radio system as an estimator of current link quality.

12. (Amended) A method according to [any one of claims 9 to 11] claim 9, [characterized in that] wherein the noise estimation measure transferred to the link quality control system is used by the digital cellular radio system to optimize user information channel throughput by adjusting at least one of the data transmission rate, the error correction depth, [and/or the] and a type of modulation.

13. (Amended) A method according to [any one of claims] claim 9 [to 12, characterized in that], wherein the noise estimation measure is transferred to a digital demodulator [(321)] and used to adjust [the] a receiver algorithm.

14. (Amended) An apparatus for estimating residual noise in [the] a frequency range of a desired part of a signal, [characterized in that it includes] comprising means [(108)] for modifying [the] an amplitude of the signal [(114)] comprising the noise, [and] means [(106)] for combining the signal [(114)] with the modified signal [(115)] to create a noise estimation measure [(116)], and means [(106)] for transferring the measure to a processing unit [(107)] .

15. (Amended) An apparatus according to claim 14, [characterized in that] wherein the means modified [(106)] for combining the signal [(114)] with the signal [(115)] to create a noise estimation measure [(116)] comprise a power meter for measuring average power content of the signal [(114)] and the modified signal [(115)] over [one or more] at least one of a plurality of common ranges [(2,0; 271; 272)] of their frequency spectra.

16. (Amended) An apparatus according to claim 14 or 15, [characterized in that] wherein the means [(108)] for modifying the amplitude of the signal [(114)] comprising the noise include means for attenuating the signal primarily outside [(270, 272)] the frequency range [(271)] of the desired part [(240)] of the signal [(114)].

17. (Amended) An apparatus according to [any one of] claim [15 or 16] 15, [characterized in that] wherein the means [(106)] for combining the signal [(114)] with the modified signal [(115)] to create a noise estimation measure [(116)] comprise means for computing [the] a difference in average power content [(232, 252)] between the signal [(114)] and the modified signal [(115)].

18. (Amended) An apparatus according to [any one of claims] claim 14 [to 17] or 15, [characterized in that it] wherein the apparatus is adapted to handle digital signals.